

Full Length Research Paper

Multidisciplinary meeting (MDM) can provide education and reinforcement of inter-professional development

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The introduction of a multidisciplinary meeting (MDM) was analysed through a retrospective empirical study. The question of using it as a valuable tool to reinforce inter-professional development was made. The data was collected from 60 forth year Chiropractic students, who were at the end of their education and who were practicing their discipline under supervision. They were chosen because they fulfilled the World Health Organisation's criteria, as they had formed their professional identity. Data was collected via two-stage feedback interviews and was analysed qualitatively. Kirkpatrick's hierarchy was then used. Findings were grouped in the hierarchy's categories and analysed in a quantitative manner. It was found that the majority of the interviewees' opinions supported the MDM as an educational tool and a number of them believed that cognitive learning was achieved, influencing their behaviour. They supported that it helped them understand other professionals. In addition, they transferred and applied knowledge and practices to their professional environment, improving their collaboration with other health-workers, potentially improving the quality of their service.

Key words: Multidisciplinary meeting, education, Kirkpatrick's Hierarchy, inter-disciplinary development.

INTRODUCTION

For a number of years, the World Health Organisation (WHO) is facing the problem of shortage of health workers throughout the world and the inability to meet the increased service demands. Their goal is to increase the expertise and productivity of the existing workforce. The way to achieve and develop this workforce is by using innovative methods of teaching. The main supported method was, and is, the inter-professional education and training, which is leading to further collaboration between health professionals by increasing the spirit of teamwork. This way, the service to the patients is improving (WHO, 1988, 1998, 2009, 2010; RCN, 2007).

When these ideas were studied, it was found that when the different groups are brought together the different professionals need to fulfil some criteria. They must be flexible, self-reflective, willing to take risks and to be ready to take the given opportunity to learn from each other. They must have already established professional identity and roles; they need to abandon stereotypes, to be able to admit that they know almost nothing, to have positive attitudes and equal status, to establish team leaders with open minds and diverse thinking, who are willing to supervise and educate such a multidisciplinary team and monitor them. Notwithstanding, the primary

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outcome of this team approach has been shown to be an improvement in service provided and patient care (Carpenter, 1995; Harden 1998; Larson et al., 1998; Wilson and Pirrie, 2000; Barr, 2003; Harris et al., 2003; Levison, 2003; RCN, 2007; CAIPE, 2007; Kane and Luz, 2009; Haas et al., 2009; Krimshtein et al., 2011). Furthermore, topics covered during inter-professional teaching have to be general to engage all participants (SCIE, 2007; Street et al., 2007; Haas et al., 2009).

In light of the benefits of inter-disciplinary learning, a programme of morning trauma meetings were initiated and developed at District Hospital in South Wales. The aim of these meetings was to educate and present contemporary orthopaedic concepts and best practice procedures to colleagues in the National Health Service (NHS) at this facility to harmonize approach to patient care for common orthopaedic conditions. This training was designed in the form of a group discussion for all doctors of the Orthopaedic Department where the treatment and the management of all acute admissions was presented and educational scenarios using the cases as stimulus were discussed and analysed further.

It was not designed by academics and mainly based on the intuition of the consultants who had followed the General Medical Council's (GMC) guidelines of a "Good Medical Practice", as it is stated that all doctors are expected to be educators (GMC, 2001). The programme's further development was based on the participants' reflection and feedback, again without academic input. Gradually the meeting became more multidisciplinary as allied health professionals and doctors from other medical disciplines started to participate and attend. This Multidisciplinary Meeting (MDM) became a focal point to discuss cases by different professionals with the ultimate goal to establish a consensus on the diagnosis and the optimization of the patients' treatment (Kane and Luz, 2009). These clinical meetings can be used either for the education of patients (Rosen et al., 1998; Wilson et al., 2007; Burton et al., 2009; Ortega-Solano et al., 2011) or the evaluation and treatment of patients (Cook et al., 1996; Howard et al., 1997; Wright et al., 2009; Palmer et al., 2010; Moss, 2010; Roffey et al., 2011); so somebody could say they are service meetings.

Literature suggests that even the clinically orientated MDM's which are designed for co-ordination of service delivery can be educational (Kane and Luz, 2011). Further suggestions support that discussion and exercise of those who participate in a MDM are the most appropriate tools that help the students' learning (Haas et al., 2009). In our case, the MDM started as educational and the discussed cases were used for this purpose, but overall the patients' care was also improved. The main question now is that with the development of the teaching in our department and the offer of the MDM as one of the teaching programmes to students of the Medical School and the Institute of Chiropractors, as well as the occasional Student Nurses, Medical Science and Physiotherapy Students, there is the need to find if the

MDM is fulfilling the purpose as an educational meeting or not. The anecdotal feedback is promising and in favour, but is this the truth? The objective is to answer the following questions. Is the meeting, as other health professionals participate, fulfilling the idea of inter-professional development? Can they learn from each other, change behaviour and move their experiences to their practice? Can an MDM be educational?

The groups of students studied in literature are mainly of two categories; medical students and nurses (Cooper et al., 2001; Quinn and Hughes, 2007). Chiropractic students during their studies are practicing constantly their "art" and for the last two years are actively participating in treating patients in specialised chiropractic clinic, where private patients are paying for the service. This practice although is under supervision, helps them to develop their professional identity. Other health workers are developing this identity much later, after their graduation, due to the delayed communication with their patients. In the present situation, the groups of students of the allied professions in some stage after their graduation will potentially work in the NHS, except the Chiropractic students, who usually after graduation are working "in isolation", in the private sector; they are what could be suggested as allied health professionals who do not train themselves to work in a team.

METHODOLOGY

The aim of this is to establish if the MDM is a useful educational tool and reinforces the inter-professional development or is it only a part of patient management. In order to do this there is a need to explore if teaching follows the Kirkpatrick's hierarchy of learning. The areas of the hierarchy are reaction, learning, behaviour and result (Cooper et al., 2001; Swanwick, 2011). Following Kirkpatrick, these areas will be explored and expanded upon. The findings were collapsed back to these four common categories and were listed within them. Initially, open coding was used in the analysis of the transcripts and the field notes taken during feedback interviews and later during focus group interviews. Later these codes were simplified and connected with Kirkpatrick's hierarchy (Table 1). The study was subject of the University of South Wales Ethical Committee's approval.

This is a retrospective empirical study. The data is qualitatively analysed based on interpretivism. Initially, as the first stage of the study, the transcripts of feedback sessions given by the 60 fourth year Chiropractic students who rotated through their Orthopaedic placement were analysed. The choice of these groups of students was made because they had the experience of the MDM and also it is taken that have formed their professional identity, fulfilling the criteria that WHO and other researchers have suggested in their studies. The feedback interviews were performed at the end of every rotation, following verbal consent, by an independent reviewer of the undergraduate centre with the presence of the main tutor who was there for the potential clarification of the programme taking into consideration the possible suggestions of the students' opinion for the betterment of the teaching. He was not actively participating and was out of the students' sight so to avoid creating pressure on them (Burgess, 1989). The facilitator will have written constructed questions as a guide (Table 2), which initially will ask the group to initiate the discussion (Flick, 2009).

Following the initial analysis of these transcripts, themes were

Table 1. Kirkpatrick's hierarchy (Cooper et al., 2001; Swanwick, 2011).

Reaction
Review and evaluate the learning experience and the perceptions of the students of the different groups
Learning
Evaluate the cognition and the interaction of the different represented professions.
Review their skills and their stereotypical understanding
Team work
Behaviour
Constructive learning
Interaction
Application in profession
Results
Collaboration and transfer of it to professional environment

Table 2. Questions asked by the facilitator.

Open questions to the interviewees
What do you achieve from attending the MDM?
Does MDM advance your education?
Did it enhance your understanding?
What opportunities do you think the MDM offers in comparison with another educational programme?
Has it improved your level of confidence in clinical management?
How did you learn in respect of constructive feedback, reflection, reinforcement of knowledge?
Is it a comfortable learning environment?
How did the MDM influence your perception about other health workers?

created and the codes of them are identified in Figure 1 mapping. To increase the credibility of the study, independent tutors of the University interviewed two focus groups of students. In each of these groups, six students participated, these students were informed about the purpose of the study and consented to the recording of their views. Prior to the discussion, all students were given written consent to sign and also verbal consent was obtained prior to the interview commencing (Table 3). Information about the project was given and also read prior to the interviews of the focus groups (Table 4).

Feedback of the findings and results of the study was available to them should they feel the necessity to obtain this information. The sessions were recorded and transcripts were made. The same codes used in the first stage were applied in the second stage so to increase the validity of the study. Following this analysis, the themes were grouped and simplified based on the Kirkpatrick's hierarchy categories using selective coding. The correlation of the initial codes seeing in Figure 1 and the Kirkpatrick's hierarchy categories is seen in Figure 2. Finally through further simplification to the positive or negative opinion on the MDM performance was recorded (Burgess, 1989; Coffey and Atkinson, 1996; Bryman, 2008; Flick, 2009; Denzin and Lincoln, 2011).

If a new theory will arise it will support that the project will be an inductive study (Bryman, 2008; de Vaus, 2009). Despite that ontologically, the study is giving a relative understanding of the question and so no generalised theory can be produced as this is

part of a positivistic approach to the research philosophy; still there will be a worthwhile result of a wider consensus which can result to a so called more general opinion. This can be the result of how the reality of the meeting can be explained as objective and how this understanding can be interpreted as reality (Williams and May, 1996).

In the first stage of the study, there was a research/collaborator relationship as the students were answering freely and they were influencing the discussion but in the second stage there was more of an informant/reporter relationship as the questions were based on the previous experience.

In the research - Collaborator relationship

"the interviewee is included in discussions up front about what information is being sought and what approaches to the topics might be most fruitful to the endeavour for both participants" (Atkinson et al., 2010).

and the

"interviewee influences the content and order of questions and topics covered" (Atkinson et al., 2010).

In the informants – Reporters relationship, the interviewer plays the role of the reporter and observes the interviewee (informant).

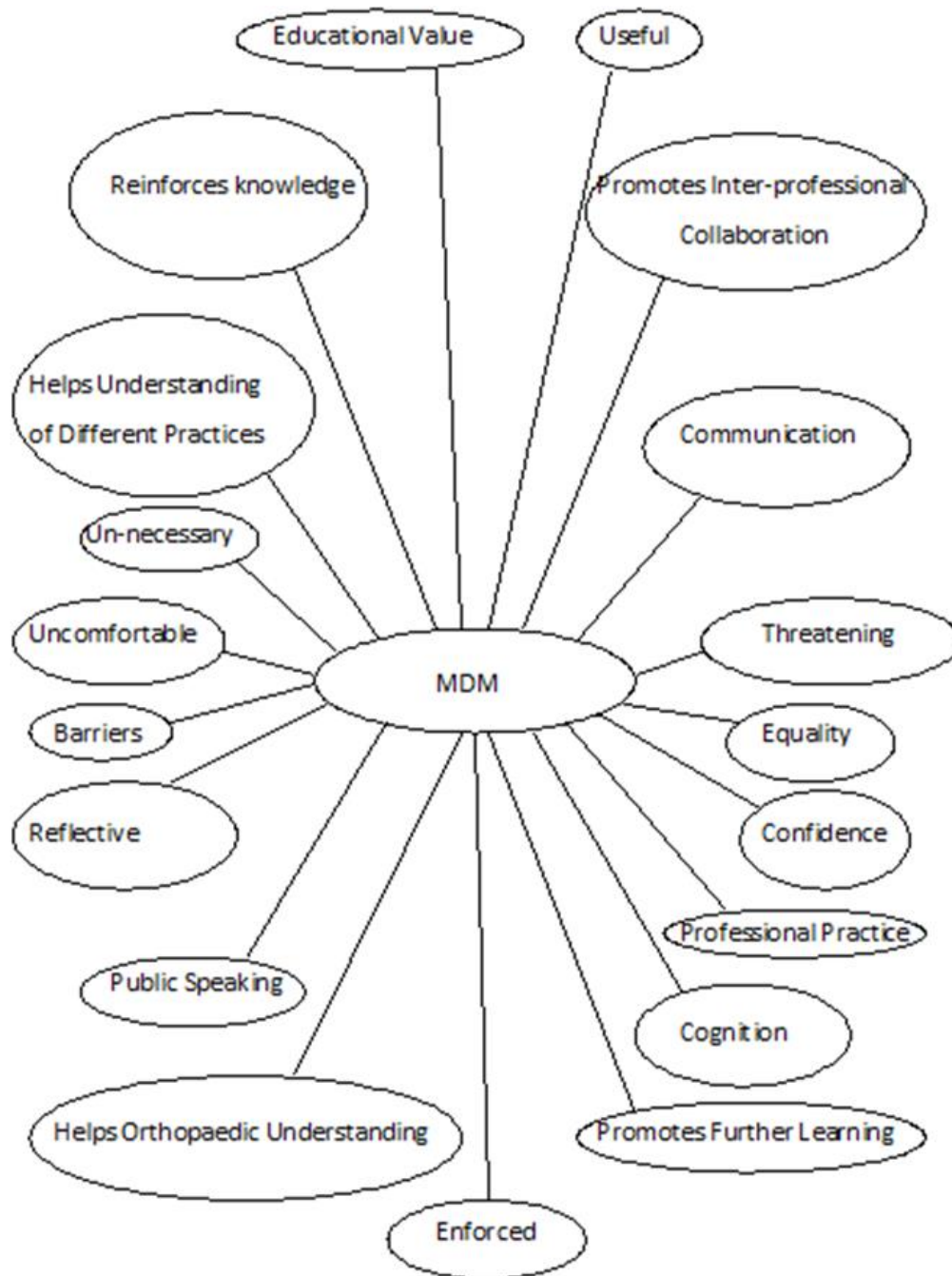


Figure 1. Initial analysis of transcripts.

"the reporter empowers the responder (now elevated to an "informant") by listening carefully and respectfully, allowing the informants to "name" the world in their own terms" (Atkinson et al., 2010).

Each interview lasted approximately one hour and was recorded, the tapes were transcribed and all notes were typed; all scripts were analysed by using the grounded analysis. Having the same themes between the two stages, the reliability could be increased if the repeatability will increase (Silverman, 2005; Bryman, 2008;

Flick, 2009; Atkinson et al., 2010). The limitations are that the study is retrospective and also the presence of the tutor during the feedback interviews.

RESULTS

Following the analysis of the data, it was found that in the first stage there were a lot of students who believed that

Table 3. Interview consent form (2 copies required: 1 copy to participant, 1 copy to researcher).

Title of project: Multidisciplinary meeting (MDM) can provide education and reinforcement of inter-professional development		
Name of researcher: Name of first author		
I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have all these answered to my satisfaction		
Please sign -----		
I give my consent to take part in the study and understand that I can withdraw from the research at any time without giving a reason		
Please sign -----		
I confirm that the interview will be recorded. The recordings will be transferred to a written format and the tapes will be destroyed. The collected information will be kept for five years		
Please sign -----		
I understand that direct quotes may be used in the final summary of the project but that my identity will remain confidential		
Please sign -----		
Participant's name	Date	Signature
_____	_____	_____
Name of person who takes consent	Date	Signature
_____	_____	_____

Table 4. Information for the project.

Thank you for taking the time to participate in this study
The purpose of the study is to understand your views on the Multidisciplinary Meeting which is performed in the Orthopaedic Department. The aim is to try to establish if this meeting is educational to you, if it is helping your integration within a team and if it is helpful to your professional development in conjunction of other disciplines of health professionals. The goal is to find if the presence of different health professionals broadened your views and helped your understanding about their role in the pathway of delivering treatment to patients.
The hope is that the data of the study could be used as a platform to change the way of future undergraduate teaching. You are chosen because of your experience, global understanding and the clear perception of education and professionalism which you have.
Your complete honesty will be valued. The whole data is and will remain anonymously collected and will remain confidential. It will only be used for the purpose of the study. The interview will be recorded and the recordings will be transcribed and data will be analysed. You will be having the facility to use pseudonyms or numbers or letters during the recordings to protect your anonymity. The data will be kept for five years before it will be destroyed and will be used exclusively for the purpose of this study.

the MDM was useful and it carried educational value; examples of quotes:

"Enjoyed the morning orthopaedic MDM's; learned a lot from the case discussions....."

or

"MDM very comprehensive at a good and understandable level, information was forthcoming and well shared...."

These examples are supporting the belief of usefulness.

During the second stage interviews of the focus groups, again the indications were in favour of the constructive teaching whereby re-enforcing the cognition of the students.

"....even just sitting there was a learning experience..... was definitely getting more involved and this increased our confidence as to how much we really knew."

There were though the not frequent at all calls of some who felt that it was mainly a *"doctor led show"* and that there was only the prospective of *"managing the patient"*. This was not obvious in the first stage but became obvious in the second stage but it was only limited to one of the focus groups and only by one individual.

The quote *"I think that it is interesting to see how they manage them (the patients) within their remits of what they can do and the resources. Personally I didn't feel as if it was too much of an MDM to be honest. I thought it was just very orthopaedic consultant led"* is noticeable and interesting. It is a very valid point and seems that the performance of the tutor as well as the environment did not help any learning in that instance.

While analysing all the data (Table 5) using the original coding, it was found that the most frequent theme was that of the educational value, followed by the interpersonal collaboration in addition to the themes of communication,

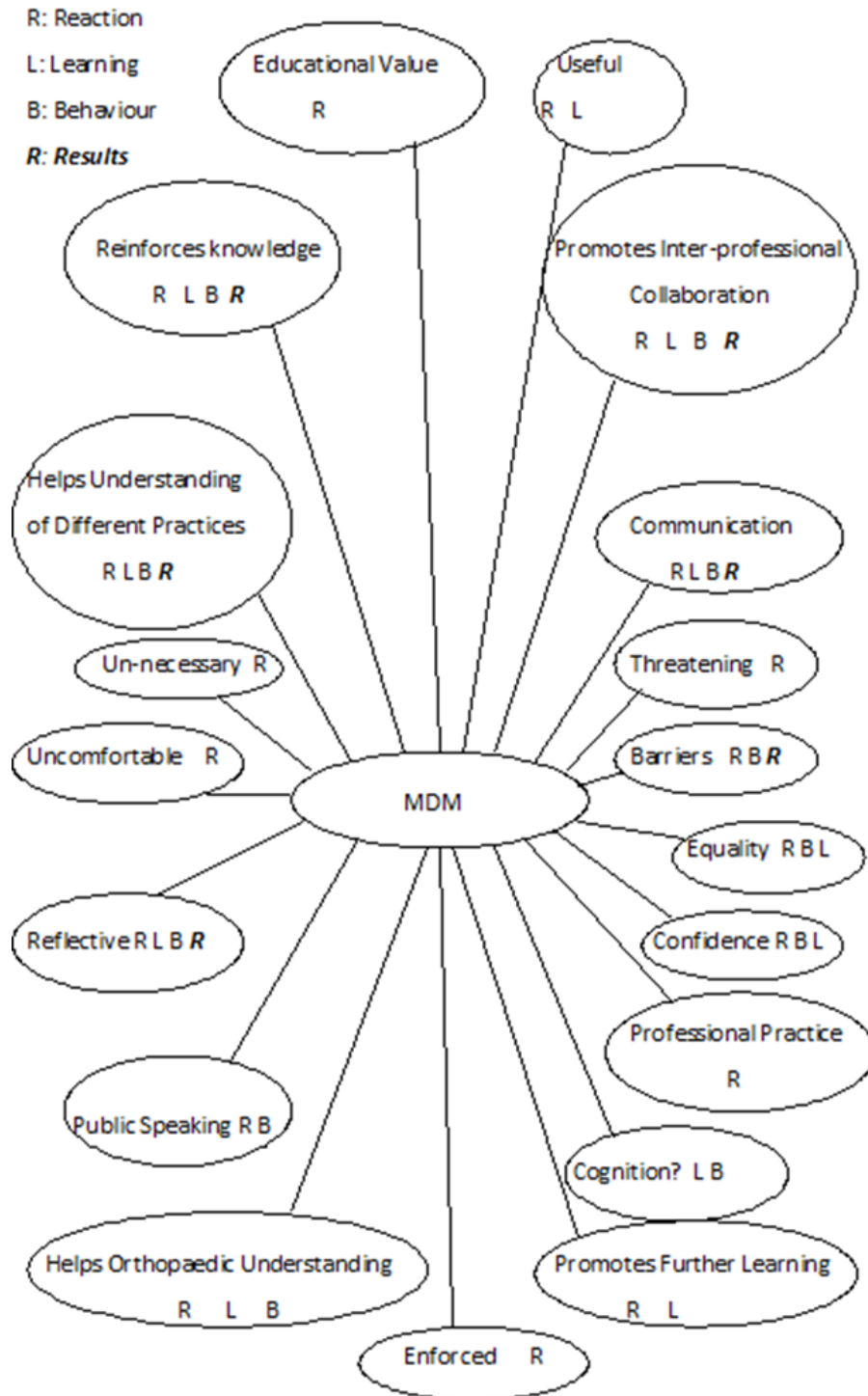


Figure 2. Kirkpatrick's hierarchy categories.

professional practice and understanding of the different practices.

When Kirkpatrick's hierarchy categories were used, the Reaction category (review of learning experience and perceptions of the students) was found to be favoured, followed by the learning category, but fewer of the

participants achieved finalization of behaviour change or transferred the knowledge (Results) into their professional environment. The grouped data answers (Table 5) were assigned to the different Kirkpatrick's hierarchy categories. The data's frequency of occurrence was marked and added, resulting in the concluding findings

Table 5. Grouped data.

Educational value	54
Useful	54
Promotes inter-professional collaboration	42
Communication	58
Threatening	3
Barriers	14
Equality	52
Confidence	57
Professional practice	48
Cognition	56
Promotes further learning	56
Enforced	6
Helps Orthopaedic understanding	47
Public speaking	49
Reflective	30
Uncomfortable	4
Unnecessary	6
Helps understanding of different practices	47
Reinforces knowledge	54

Table 6. Kirkpatrick's hierarchy categories.

Reaction	681
Learning	390
Behaviour	290
Results	161

tabulated in Table 6.

There are the quotes like *"It's as valuable as an actual education in something new. There is definitely a place for us. I think that the biggest thing I took away from it was that it is quite a good confidence booster, as well as understand other practices and exchange opinions"*

and

"Such a meeting could be established in our practices".

In the final analysis of the results checking if the experience of the MDM was a positive or a negative one, the majority of the students agreed that it was positive, and only very few found it "uncomfortable", "unnecessary", "enforced" or "threatening". This was indicated in both stages.

DISCUSSION

Due to the nature and type of study, a number of

questions would need to be addressed, including:

1. Did the students feel comfortable in the environment?
2. Was it a constructive learning experience?
3. Did the students feel welcomed?
4. Did the students achieve their objectives?
5. Will the inter-professional contact lead to collaboration and
6. Have the chiropractic students gained any confidence through this process?

In addition, the difference of the location in which the meeting takes place and the way in which this is delivered will be studied and the potential impact of these two parameters will be noted. The literature has shown that teaching in inter-professional meetings is condensed and delivered in non-clinical environments. Teaching includes presentation of cases studies, lectures or small group teaching (Cooper et al., 2001). In the present situation the interaction takes place in a clinical environment prior to the ward round. The students then have the opportunity to follow and observe the patient's journey to the end of the treatment; during this experience they are encouraged to exchange opinions.

Following this discussion the aim is to find out how the Chiropractic students are engaging with other professionals and if the MDM could be a factor which can influence future collaboration; if they learned how to work as a team with the others and if they will transfer this practice to their professional environment. If this type of MDM teaching is successful, it could provide an opportunity for other groups to develop similar programmes enhance student professional experience.

Therefore, is the MDM an educationally valid tool? Is the professional identity interfering with the common goal of common understanding? These questions add to the discussion as doubt exists with respect to the spirit of collaboration between professionals. There is a sense that there is a "tribal" way of confrontation within the meetings, as some deny their presence and participation in these multidisciplinary settings. It is found that allied medical professionals are willing to participate and collaborate between them and that the medical profession has some difficulty to participate (MacDonald, 1996; Naughton et al., 2011). There are some "barriers" to the MDM's success when it comes to inter-professional education. The initial obstacles are based on the behaviour of the different educational institutions.

Methods of allocating resources to the different disciplines of the students can contribute to different attitudes and perceptions which may create a sense of elitism for some. Another factor which can influence the interaction of the different groups is the teaching faculty which plays a fundamental role in promoting one professional group over another. All these can be easily overruled by the benefits of such a system which are cost-effectiveness, the increase of non-medical health

providers and the most important the greater understanding, collaboration and respect between professionals which leads to the greater patient satisfaction. (Singleton and Green-Hernandes, 1998; Chan et al., 2010).

This type of close educational collaboration can easily reflect in parallelity, the example being of a community within a neighbourhood where a lot of “strangers” live but when they develop common interests, they become “colleagues” working towards a common goal. But is this happening in our case? Do the Chiropractic students link themselves with the others? There is the need to establish if communication promotes collaboration.

It has been shown that MDM's have the ability to become an educational tool (Kane and Luz, 2011). This study demonstrated that students of an allied health practice who are orientated on the private sector integrated successfully within the NHS and followed the meetings with great interest, learning and improving themselves and taking the experiences for their own benefit and their practices. The minority of the negative opinions can be explained by the failure of the tutor to establish educational connection and fell below the standards of the students' expectations whereby leading them to believe that the meeting was only managerial even and that it was not necessary for them to participate or it could be the lack of engagement of the students due to their perceived professional identity.

Despite that, the majority of the answers received indicate that there was an element of Reaction according to Kirkpatrick's hierarchy, the sum of the ability for the MDM to help learning or change behaviour and finally change the professional environment is greater. Chiropractors are health practitioners who work mainly privately in individual practices. There is the possibility that some will contribute to the attitude of the person who will not be teamed with anyone. In these cases, people who are having this stance may find that team interaction is not necessary. Is the tribalism the reason for these opinions or is it the failure of the tutor? The possibility of the tutor's presence during the feedback interviews although is placed as a limitation does not seem to have any impact to the students' opinion about the usefulness of the MDM. This conclusion derives from the very limited negative opinions about it. It was initially placed as limitation because during the feedback there were no negative remarks. On the other hand, another limitation is that the study was retrospective. But may be that time helped reflection and so the limited negative opinions were the product of such action as it was not possible to be expressed immediately after the placement.

CONCLUSION

It is shown that the vast majority of students achieved the fulfilment of Kirkpatrick's hierarchy of learning and achieved behaviour changes as well as changes in their clinical practice. Although some felt that the MDM was

“uncomfortable” or “enforced upon them”, the number was negligible compared to the majority of the expressed positive opinions. The participants developed teamwork and learned from the experience of other practitioners within the Health system, reinforcing their inter-disciplinary development. They proved that a MDM can be educational and constructive, stimulating the students with new cognition and teaching them new behaviours. This provides the potential for new practices to be transferred to professional environments by promoting inter-professional development for individuals.

Conflict of interests

There is no conflict of interest from any of the authors.

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